

# Technology in Rural Transportation

A recent study documented more than eighty proven, cost-effective, “low-tech” solutions to rural transportation needs, most developed or implemented by local transportation professionals. One of these solutions is outlined below:



Learn all about the simple solutions on the Internet at <http://inform.enterprise.prog.org>

The simple solutions report is available from Hau To at (503) 892-2533, or email: [to@crc-corp.com](mailto:to@crc-corp.com)

## Electronic Engineers' Estimator

### Overall goal:

To reduce data entry errors and streamline the process of preparing and submitting an Engineers Estimator Worksheet, which is required for every transportation project in the state of Michigan, by computerizing the worksheet.

### Technical approach:

In the past, this worksheet has been completed by hand and then submitted to Michigan DOT, where it was then entered into a computer. A mistake or modification meant that the entire worksheet had to be completed again and resubmitted. The worksheet can now be completed by an engineer using a computer program. The system pulls up work numbers and units of measure automatically, to ensure that data is consistent. Arithmetic is also automated to minimize errors. When the worksheet is finished, it is exported to BAMS, a software program developed by AASHTO. This program modifies the data into the appropriate format, after which it is submitted electronically to MDOT, removing the opportunity for data entry errors. The worksheet can be submitted by various methods, including magnetic disks or as an attachment to an electronic message.

### Current status:

Prototype screens were shown to engineers in Oakland and Washtenaw Counties to get feedback on how the worksheet should look and function. A prototype worksheet was developed and distributed to Oakland, Washtenaw, and Bay Counties in December, 1996.

### Location / geographic scope:

The electronic worksheet has been developed specifically for Michigan. It may be adaptable for other states.



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**Agencies involved:**

Oakland County, Washtenaw County, Bay County, Michigan Department of Transportation, Michigan Technological University.

**Cost information:**

The worksheet cost \$18,000 for development and pressing of 1,000 CDs. The electronic worksheet is available free to local agencies in Michigan from the Department of Transportation.

**Key contacts:**

Terry McNinch, LTAP Program Manager. (906) 487-2102

**Have goals been achieved?**

Yes, product was very well received. In January 2001, version 2 is currently being beta tested for local and county use.

**Solution timeline:**

The worksheet was available for distribution in January 1997. The worksheet is part of a CD containing publications, including standards documents and construction guides. Version 2 will incorporate both English and Metric units as well as an export function to the Field Manager program available from AASHTO.

